2014 YCCSA SUMMER SCHOLARSHIP PROJECT SUBMISSION

This form is for prospective project supervisors to submit their projects to be included in the YCCSA Summer Scholarships Programme for 2014.

It is the purpose of the Summer School that any projects submitted are interdisciplinary in nature.

Date	*5 February 2014*
Main Supervisor's Name	*C. J. H. Elliott*
Main Supervisor's Department	*Biology*
Co-supervisors' name(s) and Departments	*S. L. Smith, Electronics*
Project Title	*Bradykinesia in fly models of Parkinson's disease*
Project Description	*Please aim for around 2 paragraphs. Remember that this must be pitched at prospective project scholarship students.* *Parkinson's disease (PD) is associated with the loss of dopaminergic neurons and resulting disruption of movement. Following the discovery that some forms of PD are inherited, a number of fly models have been created by manipulating the relevant gene in flies. Several of these show deficits in locomotion, but in most cases the detailed changes in movement have not been quantified.* *The aim of this project is to use novel biologically-inspired computer algorithms to analyse movement of flies from video recordings. We will measure a range of flies expressing PD related genes and compare these movements with those expressed by human PD patients. If time permits, we will feed the flies with drugs used in PD and lead compounds under development as novel therapies.*
Required skills	*A short synopsis of the necessary skills for the summer student. Please be careful to specify the skills rather than requiring students to have followed a particular degree programme.* *Students should enjoy working on a small scale – flies are very small!* *Experience of the C programming language and MATLAB are required.*
Project dates	*To create a cohort of students who can work and learn together, ideally all projects would run for 9 weeks, starting on Monday, 14 July 2014 and finishing on Friday, 12 September 2014. If you have any special requirements regarding the dates of your project, please indicate these here.*
Other information	*Anything that doesn't easily fit above.*

References	*Please include at least one relevant journal reference.*
	Vincent, A., Briggs, L., Chatwin, G.F.J., Emery, E., Tomlins, R., Oswald, M., Middleton, C.A., Evans, G.J.O., Sweeney, S.T., Sparrow, J.C. and Elliott, C.J.H. (2012) *parkin* induced defects in neurophysiology and locomotion are generated by metabolic dysfunction and not oxidative stress. Hum. Mol. Gen. 21: 1760-1769, Abstract & Free Full text Alty, J.E., Jamieson, S., Lones, M.A., & Smith, S.L. (2012) How slow is too slow? Objective measurement of bradykinesia in Parkinson's disease using novel non-invasive devices. Proc. Int. Congress on Parkinson's Disease and Movement Disorders, 27, suppl. 1, S91-S92 Link

When complete, please email the form to sarah.christmas@york.ac.uk